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(54) IMPARTING STRETCH TO FABRICS

ERZEUGUNG VON DEHNBARKEIT IN GEWEBEN

PROCEDE DE CREATION D'UNE CARACTERISTIQUE D'ETIREMENT DANS DES TISSUS

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Description

The present invention relates to a process for treating fabric and to a fabric construction system, particularly though not exclusively, for application in clothing manufacture, which enables a certain degree and type of stretch to be imparted into, for example, a waistband, which hitherto has not been achieved.

Conventionally, waistband interlining can be elasticated and the outer fabric of the waistband "ruched" or "gathered", providing for a large degree of stretch whilst compromising the "tailored" look and fit of the garment to which such an elasticated waistband is attached: or comprises a "non-stretch" interlining which acts as a stiffener stabilising the outer fabric, affording some degree of reinforcement and perhaps providing added resilience.

The disadvantage of the latter system of construction is that there is little "give" or "ease" in that area of the garment incorporating the waistband, and the fit of the garment may become uncomfortable to the wearer, for example after meals when the waist expands; in prolonged wear the top of the waistband can be forced to "give way" and effectively "roll over" rendering the look of the garment unsightly. In addition a wearer falling mid way between sizing of "off the peg" waistbanded garments selects a garment which is either too tight or too loose in normal wear.

Relatively recently waistbands incorporating a combination of interlinings, linings and outer fabrics, although not necessarily all three components, which have inherent "give" or "ease" and provide a degree of "stretch" have been produced and sold in trousers and skirts. Waistbands incorporating "stretch" fabrics for example those containing "Lycra" or "Elastane", and/or those referred to as "weft stretch", in some cases achieve a satisfactory level of comfort.

The present invention is therefore concerned primarily with consistently achieving "ease" and comfort using conventional "non-stretch" outer fabrics, for example those where the inherent characteristic in the length or width of the material does not have a sufficient degree of "ease" or "stretch" to enable a "stretch" waistband to be produced with conventional methods. Some examples of such fabrics include woven or knitted combinations of polyester/wool, polyester/viscose, cotton etc.

US Patent No. 4051215 discloses a method of applying heat and pressure to a woven fabric to impart elasticity in its warp direction, which includes the use of a cellulose reactive resin solution.

German Patent Specification No. 2444923 discloses affixing an interlining to a fabric, in particular stitching a stiffening strip to a wider facing strip.

British Patent Specification No 2256785 describes a system in which elastic material for which the shrinkage is accurately known on heat treatment is adhered to the fabric and the composite subjected to heat and

pressure treatment to cause shrinking of the elastic material and thus also of the fabric to which it is adhered.

According to a first aspect of the present invention there is provided a method of treating a woven fabric, the method being characterised in the combination of two stages - a first stage which includes applying heat and pressure to the fabric in such a manner that the yarn strands substantially "across" the width of the fabric are forced closer together thus imparting generally semi-permanent "ease" or "stretch" into the fabric, and a subsequent, second stage which includes affixing to the fabric treated according to the first stage of the method a selected interlining and/or interlining combination having inherent stretch whereby the semi-permanent "ease" or "stretch" imparted to the fabric during the first stage is made substantially permanent during the second stage.

It is intended that the fabric so treated would be an outer fabric, but the process can also be applied to lining or interlining fabrics.

The fabric treated may be in full width form, but typically the fabric (e.g. an outer fabric) is cut into strips either down the length of the piece (i.e. in the "warp" direction - where continuous strips may be used) or at right angles across the piece (i.e. in the "weft" direction). This provides the "classic" tailored look in the finished waistband. If it is desired to achieve a higher degree of "stretch" the fabric may be cut at a predetermined angle to the warp or weft direction which will create additional "ease" in the strip dependent on the angle of "bias" selected, but will compromise the traditional look and would be unacceptable in fabrics with a check pattern for example.

Naturally, if the strips are cut at right angles across the piece (i.e. in the "weft" direction), the reference made herein to the strands substantially "across" the width of the fabric should be interpreted as meaning the strands substantially "across" the width of the strip.

The strips may be discrete strips or may be continuous strips or reels of fabric, the latter option permitting higher process efficiency to be achieved although this is not always practical from a design viewpoint or necessarily cost effective in cloth utilisation terms.

Suitable interlining selections could include "elastic" types where the degree of "stretch" is known as well as the recovery performance during prolonged wear.

The interlining/s may be woven, woven biased; knitted; nonwoven; web adhesives or any other suitable material which, when fused, will maintain the stretch and recovery properties imparted to the outer fabric during the treatment of the present invention. In some cases the treatment stage is sufficient in itself to enable "stretch" to be imparted and retained without the need for interlining attachment in the construction.

Where an interlining is affixed to the treated outer fabric, the fused strip may optionally be further processed, for example it may be fed through an overlock machine to eventually provide for a "curtain" finish or be

sewn to a pre-formed stretch/bias lining or "lining composite".

A "lining composite" may be manufactured according to the present invention by subjecting a "non-stretch" lining fabric, for example woven polyester/cotton to the heat and pressure treatment specified as being in accordance with the first aspect of the invention, whereby stretch is imparted to the lining fabric. A suitable interlining fabric is fused to the pretreated lining fabric, the interlining fabric being such that, when fused, it will maintain the stretch and recovery properties of the lining fabric imparted by the treatment of the present invention. This provides a "lining composite" which has the desired "stretch" characteristic - this process has the advantage of avoiding "bias" sewing costs involved in conventional "lining composite" production and enables a wider range of fabrics to be utilised in the lining of trousers or skirts. Typically the lining fabric would be in the form of a continuous reel, to provide a continuous "lining composite".

The method of the present invention may conveniently be carried out by machine, and according to the second aspect of the present invention there is provided fabric treatment apparatus characterised in the combination of means for applying heat and pressure to a woven fabric, transport means for effecting relative movement between said heat and pressure application means and said fabric whereby passage of the fabric through the apparatus results in the yarn strands substantially "across" the width of the fabric being forced closer together thus imparting semi-permanent "ease" or "stretch" into the fabric, and means for affixing to the fabric previously treated in said heat and pressure application means an interlining and/or interlining combination having inherent stretch whereby the semi-permanent "ease" or "stretch" imparted to the fabric by said heat and pressure application means is made substantially permanent.

The apparatus preferably includes means for handling continuous reels of fabric (if used). In the case of continuous reels an operator would be required to load the reels, whereas with individual strips an operator is required to locate each individual strip in a similar type operation to the placement of strips in a conventional waistband fusing operation.

Typically, the apparatus comprises a rubberised conveyor belt in close proximity to a heated steel roller, the strip passing along the belt and being "nipped" under the roller where both pressure and heat is applied progressively to the whole of the length of the strip or reel as the fabric progresses through the apparatus.

Preferably, the settings for the temperature and pressure of the steel roller, and the speed of the rubberised conveyor belt are pre-selected for one particular run or series of runs, but some or all of these settings can be variable dependant upon the degree of "stretch" required and the nature or composition of the material being processed. The apparatus preferably includes

means for optional steaming, water mist or similar "damping" of the fabric prior to the "nip" to aid the process.

During the process the yarn strands disposed at right angles to the direction of the rubber conveyor or at least substantially "across" the width of the strip are forced closer together.

The extent to which the "closing up" occurs for example may be dependant upon machine settings, hygral conditions, inherent thermal yarn shrinkage, the "set" of the fabric, etc.

On exiting from this apparatus the fabric strip has been treated in such a way as to impart generally semi-permanent or permanent "ease" or "stretch" into the fabric.

Where the apparatus is used to treat strips of outer fabric or lining fabric, the apparatus preferably encompasses means for fusing interlining/s to the treated fabric. This may be either "in line" with the main apparatus or integral therewith, or alternatively the treated strip may be fused with interlining/s by passage through a conventional waistband fusing system.

According to a third aspect of the present invention there is provided a woven fabric having "ease" or "stretch" imparted thereto by the method of the first aspect of the present invention.

According to a fourth aspect of the present invention there is provided a waistband incorporating outer fabric and/or lining fabric and/or interlining fabric treated in accordance with the first aspect of the present invention.

Whilst the fabric or fabric composite produced in accordance with the present invention having "stretch", potential is primarily intended to be incorporated in a waistband around the waists of garments such as trousers or skirts, the product could also be utilised for any other part of a garment where its benefits would be advantageous, for example to provide "ease" around cuffs, pocket mouths, trouser bottoms, sleeve heads etc. It could also have wider applications to textile articles other than garments, where "stiffening" or reinforcing with a certain degree of "stretch" is required.

Many other applications are also envisaged, for example tapes produced for seam sealing in, for example, the manufacture of waterproof outer garments. Conventionally, tapes for this purpose have to be cut on the bias in order to have sufficient stretch, whereas using a tape made from fabric treated according to the present invention has "stretch" or "ease" built in and therefore removes the need for biasing.

Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

Figure 1 illustrates the preparation of outer fabric strips,

Figure 2 is a schematic drawing of the machine process,

Figure 3 illustrates strands drawing closer together,

Figure 4 illustrates interlining/s being fused to the strips,

Figures 5 & 6 illustrate respectively the construction of a "lined waistband" and its attachment to a garment,

Figures 7 & 8 illustrate respectively the construction of a "cloth waistband" and its attachment to a garment, and

Figure 9 illustrates the bottom of the outer fabric "composite" being overlocked to eventually provide a "curtain finish".

Referring to Figure 1 an outer fabric 10 is cut into strips 12, 14 either across the fabric (12) or down the length of the fabric (14). Alternatively, in Figure 1A, a continuous strip or reel 16 is cut down the length of the fabric, from the roll 18. The fabric may alternatively be treated in the full width form.

As can be seen in Figure 2, the apparatus according to the invention comprises a rubberised conveyor belt 20 driven by conveyor rollers 22, 24, and a heated roller 26 which is held against the belt 20 in closed proximity to roller 24, so as to apply heat and pressure to a fabric strip 12 passing through the nip formed between rollers 26 and 24. The strips are placed onto the conveyor by the operator - the fabric strip direction being at right angles to the heated roller. The strip is progressed through the nip of the roller and rubberised conveyor.

The result of this treatment is to force the strands which pass substantially across the width of the strip to draw closer together, as shown in Figure 3 (Figure 3(i) is before treatment, Figure 3(ii) is after treatment).

As shown in Figure 4, fusible interlining 28 is introduced and fused to the treated outer fabric strips 12 - this operation can be performed "in-line" with the apparatus shown in Figure 2, using a hot air applicator 34 which directs hot air into the nip between two rollers 32, 30. The result is a strip 12A which comprises a treated outer fabric strip 12 fused with interlining 28. One particularly suitable fusible interlining is reference number PF1 from Parema Ltd. Alternatively, a conventional waistband fusing system can be utilised to carry out this step.

Referring to Figure 5, a lined waistband may be created when the outer fabric fused composite 36 at least part of which has been treated according to the present invention and comprising an outer fabric 36A, a fusible carrier 36B and a stiffener 36C is sewn along sewing line 40 to a lining or "lining composite" 42 comprising a lining fabric 42A and a fusible interlining 42B (the lining composite is generally supplied in a continuous reel form to the clothing manufacturer). The "outer fabric fused composite" 36 may then be folded along the edge

of the stiffener 36C or along slots provided in the carrier thereby setting the lining or "lining composite" back from the edge of the made up waistband, as illustrated in Figure 6. The assembly is then stitched together along sewing lines 44, 46.

Referring to Figures 7 & 8, a "cloth waistband" may be created by folding the outer fabric fused composite 36, at least one of the components of which has been treated in accordance with the present invention, in half, either along the edge of the stiffener (if one has been used) or by folding along the slots in the fusible interlining (if provided); the unfinished edges are folded under and attached to the outer and inner sides of the garment as shown in Figure 8, being secured along sewing lines 48, 50.

Optionally, the "outer fabric fused composite" 36 can be overlocked along one edge 52 by an overlock sewing machine as shown in Figure 9, to provide a "curtain finish" to the cloth waistband 54.

Claims

1. A method of treating a woven fabric, the method being characterised in the combination of two stages - a first stage which includes applying heat and pressure to the fabric in such a manner that the yarn strands substantially "across" the width of the fabric are forced closer together thus imparting generally semi-permanent "ease" or "stretch" into the fabric, and a subsequent, second stage which includes affixing to the fabric treated according to the first stage of the method a selected interlining and/or interlining combination having inherent stretch whereby the semi-permanent "ease" or "stretch" imparted to the fabric during the first stage is made substantially permanent during the second stage.
2. A method according to Claim 1 wherein the fabric to be treated is cut into strips either down the length of the piece or at right angles across the piece.
3. A method according to Claim 2 wherein the strips are either discrete strips or continuous strips or reels of fabric.
4. A method according to any of the preceding Claims wherein the interlining is selected from "elastic" types of interlining.
5. A method according to any of the preceding Claims wherein the treated fabric is further processed by feeding through an overlock machine.
6. A method according to any of Claims 1-4 wherein the treated fabric is further processed by being sewn to a pre-formed stretch/bias lining or "lining composite".

7. A method according to Claim 6 wherein the "lining composite" is manufactured by subjecting a "non-stretch" lining fabric to the first stage heat and pressure treatment according to Claim 1 whereby stretch is imparted to the lining fabric, and then fusing this to a suitable interlining fabric, which, when fused, will maintain the stretch and recovery properties of the lining fabric imparted during the first stage treatment according to Claim 1, thus providing a "lining composite" which has the desired "stretch" characteristic.

8. Fabric treatment apparatus characterised in the combination of means (24,26) for applying heat and pressure to a woven fabric (10), transport means (20,22,24) for effecting relative movement between said heat and pressure application means and said fabric whereby passage of the fabric through the apparatus results in the yarn strands substantially "across" the width of the fabric being forced closer together thus imparting semi-permanent "ease" or "stretch" into the fabric, and means (30,32) for affixing to the fabric previously treated in said heat and pressure application means an interlining (28) and/or interlining combination having inherent stretch whereby the semi-permanent "ease" or "stretch" imparted to the fabric by said heat and pressure application means is made substantially permanent.

9. Apparatus according to Claim 8 wherein the apparatus is adapted to handle individual strips (12) of fabric.

10. Apparatus according to Claim 8 wherein the apparatus includes means for handling continuous reels (16) of fabric.

11. Apparatus according to any of Claims 8-10 wherein the apparatus comprises a rubberised conveyor belt (20) in close proximity to a heated steel roller (26), the strip passing along the belt and being "nipped" under the roller where both pressure and heat is applied progressively to the whole of the length of the strip or reel as the fabric progresses through the apparatus.

12. Apparatus according to Claim 11 wherein the settings for the temperature and pressure of the steel roller (26), and the speed of the rubberised conveyor belt (20) are pre-selected for one particular run or series of runs, but some or all of these settings can be variable dependant upon the degree of "stretch" required and the nature or composition of the material being processed.

13. Apparatus according to any of Claims 8 to 12 wherein the apparatus includes means for optional

steaming, water mist or similar "damping" of the fabric prior to the "nip" to aid the process.

14. A woven fabric/interlining composite having "ease" or "stretch" imparted thereto by the method of Claim 1.

15. A waistband incorporating a fabric/interlining composite treated in accordance with the method of Claim 1.

Patentansprüche

1. Verfahren zum Behandeln eines Gewebes, wobei das Verfahren gekennzeichnet ist durch die Kombination von zwei Stufen, nämlich einer ersten Stufe, die das Aufbringen von Wärme und Druck auf das Gewebe umfaßt, und zwar derart, daß die Fadenstränge im wesentlichen "quer" zur Breite des Gewebes dichter zusammengedrängt werden, um dadurch eine im allgemeinen semi-permanente "Nachgiebigkeit" oder "Stretcheigenschaft" in das Gewebe einzubringen, und einer anschließenden zweiten Stufe, die das Befestigen einer ausgewählten Einlage und/oder Einlagekombination mit eigenem Stretchvermögen an dem gemäß der ersten Stufe des Verfahrens behandelten Gewebe umfaßt, so daß dadurch die dem Gewebe während der ersten Stufe verliehene semi-permanente "Nachgiebigkeit" oder "Stretcheigenschaft" während der zweiten Stufe zu einer im wesentlichen permanenten Eigenschaft wird.

2. Verfahren nach Anspruch 1, wobei das zu behandelnde Gewebe in Streifen geschnitten wird, entweder längs der Länge des Stückes oder unter rechten Winkeln quer zu dem Stück.

3. Verfahren nach Anspruch 2, wobei die Streifen entweder diskrete Streifen oder kontinuierliche Streifen oder Wickel bzw. Rollen von Gewebe sind.

4. Verfahren nach einem der vorhergehenden Ansprüche, wobei die Einlage aus "elastischen" Typen von Einlagen gewählt wird.

5. Verfahren nach einem der vorhergehenden Ansprüche, wobei das behandelte Gewebe dadurch weiter verarbeitet wird, daß es durch eine Overlock-Nähmaschine geführt wird.

6. Verfahren nach einem der Ansprüche 1 bis 5, wobei das behandelte Gewebe dadurch weiter verarbeitet wird, daß es an eine vorgefertigte Stretch/

Vorspannungseinlage oder "Verbundeinlage" angehängt wird.

7. Verfahren nach Anspruch 6,
wobei die "Verbundeinlage" hergestellt wird, indem man ein Einlagengewebe vom "nicht-Stretch-Typ" der Wärme- und Druckbehandlung der ersten Stufe gemäß Anspruch 1 unterwirft, so daß dadurch dem Einlagengewebe eine Stretcheigenschaft verliehen wird, und indem man dann dieses auf ein geeignetes Einlagengewebe klebt, das, wenn es verklebt ist, die Stretch- und Rückstelleigenschaften des Einlagengewebes beibehalten wird, die ihm während der ersten Stufe der Behandlung gemäß Anspruch 1 verliehen worden sind, so daß eine "Verbundeinlage" gebildet wird, welche die gewünschten "Stretch"-Eigenschaften besitzt.
8. Vorrichtung zur Gewebebehandlung, gekennzeichnet durch die Kombination von Einrichtungen (24, 26) zum Aufbringen von Wärme und Druck auf ein Gewebe (10), Transporteinrichtungen (20, 22, 24), um eine Relativbewegung zwischen den Einrichtungen zum Aufbringen von Wärme und Druck und dem Gewebe zu bewirken, so daß der Durchgang des Gewebes durch die Vorrichtung dazu führt, daß die Fadenstränge im wesentlichen "quer" zur Breite des Gewebes dichter zusammengedrängt werden, um somit eine semi-permanente "Nachgiebigkeit" oder "Stretcheigenschaft" in das Gewebe einzubringen, und Einrichtungen (30, 32), um zu dem vorher in den Einrichtungen zum Aufbringen von Wärme und Druck behandelten Gewebe eine Einlage (28) und/oder eine Einlagenkombination mit eigenem Stretchvermögen zu befestigen, so daß dadurch die dem Gewebe von den Einrichtungen zum Aufbringen von Wärme und Druck verliehene semi-permanente "Nachgiebigkeit" oder "Stretcheigenschaft" im wesentlichen permanent gemacht wird.
9. Vorrichtung nach Anspruch 8, wobei die Vorrichtung dazu ausgelegt ist, einzelne Streifen (12) von Gewebe zu behandeln.
10. Vorrichtung nach Anspruch 8, wobei die Vorrichtung Einrichtungen aufweist, um kontinuierliche Wickel oder Rollen (16) von Gewebe zu behandeln.
11. Vorrichtung nach einem der Ansprüche 8 bis 10, wobei die Vorrichtung ein gummiertes Förderband (20) in unmittelbarer Nähe zu einer beheizten Stahlwalze (26) aufweist, wobei der Streifen längs des Förderbandes läuft und unter der Walze in einen "Quetschspalt" gebracht wird, in welchem sowohl Druck als auch Wärme fortschreitend auf die gesamte Länge des Streifens oder der Rolle auf-

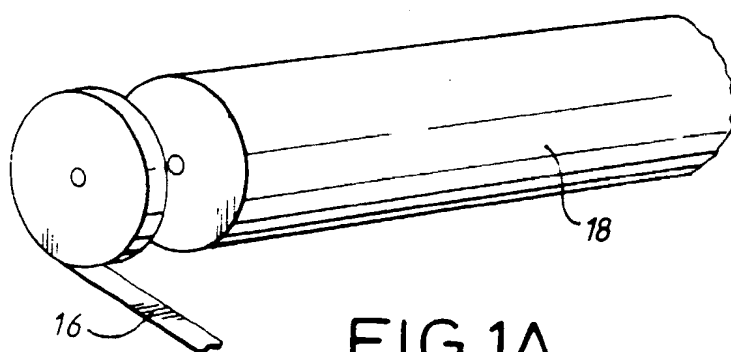
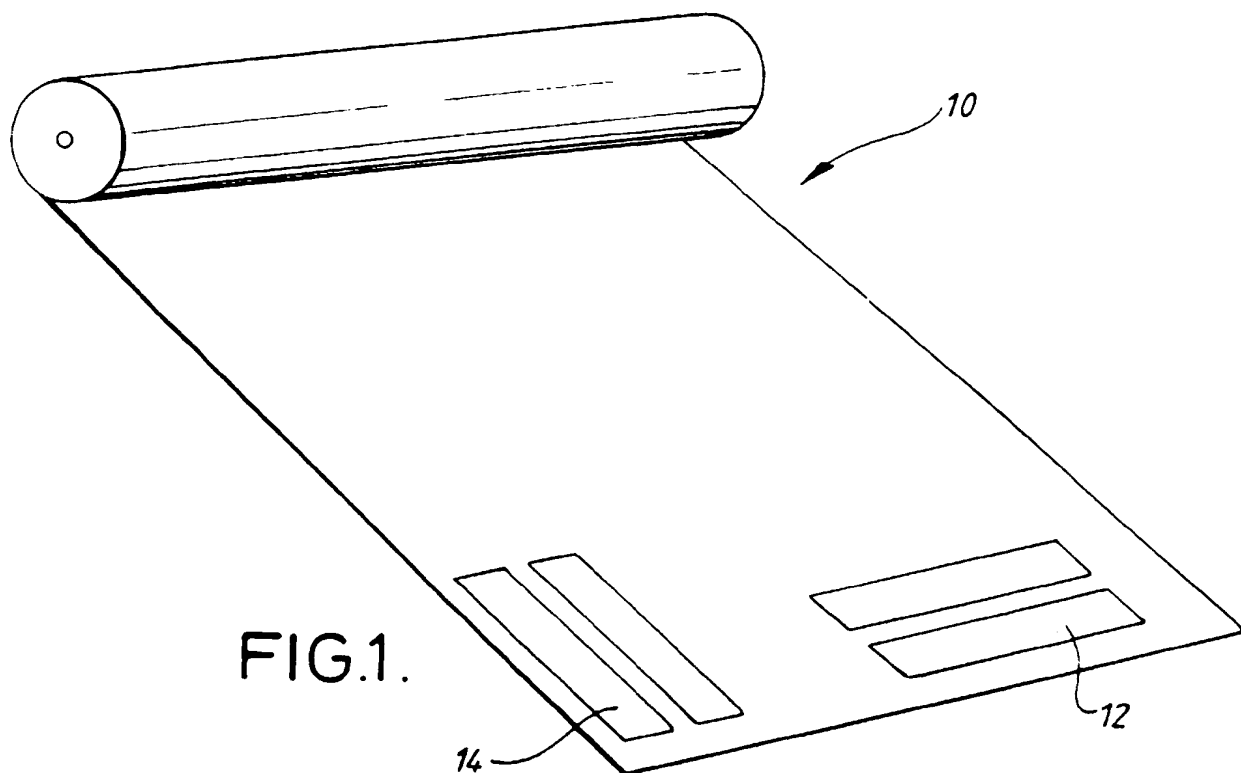
gebracht werden, während das Gewebe sich durch die Vorrichtung vorwärts bewegt.

12. Vorrichtung nach Anspruch 11, wobei die Einstellungen für die Temperatur und den Druck der Stahlwalze (26) und die Geschwindigkeit des gummierten Förderbandes (20) für einen bestimmten Durchgang oder eine Serie von Durchgängen vorgewählt sind, wobei aber einige oder sämtliche von diesen Einstellungen variabel sein können, und zwar in Abhängigkeit von dem Grad des erforderlichen "Stretchvermögens" und der Art oder Zusammensetzung des gerade verarbeiteten Materials.
13. Vorrichtung nach einem der Ansprüche 8 bis 12, wobei die Vorrichtung eine Einrichtung aufweist, um fakultativ ein Aufbringen von Dampf, Wasserdampf oder eines ähnlichen "Dämpfungsvorganges" auf das Gewebe vor dem "Quetschspalt" auszuüben, um den Prozeß zu unterstützen.
14. Gewebe/Einlage-Verbundmaterial, das "Nachgiebigkeit" oder "Stretchvermögen" besitzt, welche ihm mit dem Verfahren gemäß Anspruch 1 verliehen worden sind.
15. Bund mit eingebautem Gewebe/Einlage-Verbundmaterial, das mit dem Verfahren gemäß Anspruch 1 behandelt worden ist.

Revendications

1. Procédé pour traiter un tissu tissé, le procédé étant caractérisé par la combinaison de deux étapes, une première étape qui comprend une application de chaleur et de pression au tissu de telle sorte que les fils sensiblement "en travers" de la largeur du tissu sont rapprochés de force les uns des autres, conférant ainsi globalement une "aisance" ou une "élasticité" semi-permanente au tissu, et une seconde étape ultérieure qui comprend la fixation au tissu traité selon la première étape du procédé d'une doublure intermédiaire sélectionnée et/ou d'une combinaison de doublure intermédiaire ayant une élasticité inhérente, moyennant quoi "l'aisance" ou "l'élasticité" conférée au tissu pendant la première étape est rendue sensiblement permanente pendant la seconde étape.
2. Procédé selon la revendication 1, dans lequel le tissu à traiter est coupé en bandes soit dans la longueur du morceau de tissu soit à angles droits en travers du morceau de tissu.
3. Procédé selon la revendication 2, dans lequel les bandes sont soit des bandes discrètes soit des ban-

- des continues ou des rouleaux de tissu.
4. Procédé selon l'une quelconque des revendications précédentes, dans lequel la doublure intermédiaire est sélectionnée à partir de types "élastiques" de doublure intermédiaire. 5
 5. Procédé selon l'une quelconque des revendications précédentes, dans lequel le tissu traité subit un traitement plus poussé en étant amené dans une machine overlock. 10
 6. Procédé selon l'une quelconque des revendications 1 à 4, dans lequel le tissu traité est davantage traité en étant cousu à une doublure élastique/en biais préformée ou "doublure composite". 15
 7. Procédé selon la revendication 6, dans lequel la "doublure composite" est fabriquée en soumettant un tissu de doublure "non élastique" au traitement par la chaleur et la pression de la première étape selon la revendication 1, l'élasticité étant conférée au tissu de doublure, et ensuite en le fixant à un tissu de doublure approprié, qui, lorsqu'il est fixé, maintient les propriétés d'élasticité et de recouvrement de forme du tissu de doublure conférées pendant le traitement de la première étape selon la revendication 1, fournissant ainsi une "doublure composite" qui possède la caractéristique "d'élasticité" souhaitée. 20 25 30
 8. Appareil de traitement pour tissu caractérisé par la combinaison de moyens (24, 26) pour appliquer de la chaleur et une certaine pression à un tissu tissé (10), des moyens de transport (20, 22, 24) pour effectuer un mouvement relatif entre lesdits moyens d'application de chaleur et de pression et ledit tissu, moyennant quoi le passage du tissu dans l'appareil a pour conséquence que les fils sensiblement "en travers" de la largeur du tissu sont rapprochés de force les uns des autres, conférant ainsi une "aisance" ou une "élasticité" semi-permanente au tissu, et des moyens (30, 32) pour fixer au tissu préalablement traité dans lesdits moyens d'application de chaleur et de pression une doublure intermédiaire (28) et/ou une combinaison de doublure ayant une élasticité inhérente, moyennant quoi "l'aisance" ou "l'élasticité" semi-permanente conférée au tissu par lesdits moyens d'application de chaleur et de pression est rendue sensiblement permanente. 35 40 45 50
 9. Appareil selon la revendication 8, dans lequel l'appareil est adapté pour manipuler des bandes (12) de tissu individuelles. 55
 10. Appareil selon la revendication 8, dans lequel l'appareil comprend des moyens pour manipuler des rouleaux (16) de tissu continus.
 11. Appareil selon l'une quelconque des revendications 8 à 10, dans lequel l'appareil comprend une bande transporteuse (20) caoutchoutée à proximité immédiate d'un rouleau (26) en acier chauffé, la bande passant le long de la bande transporteuse et étant "pincée" sous le rouleau où à la fois une pression et de la chaleur sont appliquées progressivement sur toute la longueur de la bande ou du rouleau lorsque le tissu progresse dans l'appareil.
 12. Appareil selon la revendication 11, dans lequel les réglages de la température et de la pression du rouleau en acier (26) et la vitesse de la bande transporteuse (20) caoutchoutée sont présélectionnés pour un cycle particulier ou une série de cycles, mais certains de ces réglages peuvent être variables en fonction du degré d'"élasticité" nécessaire et de la nature ou de la composition du matériau traité.
 13. Appareil selon l'une quelconque des revendications 8 à 12, dans lequel l'appareil comprend des moyens pour exposer de manière facultative le tissu à la vapeur, à une brume d'eau ou autre "humidification" similaire avant le "pincement" pour favoriser le traitement.
 14. Tissu tissé/composite de doublure intermédiaire ayant une certaine "aisance" ou "élasticité" qui leur est conférée par le procédé de la revendication 1.
 15. Bande de poignet incorporant un tissu/composite de doublure intermédiaire traité conformément au procédé de la revendication 1.



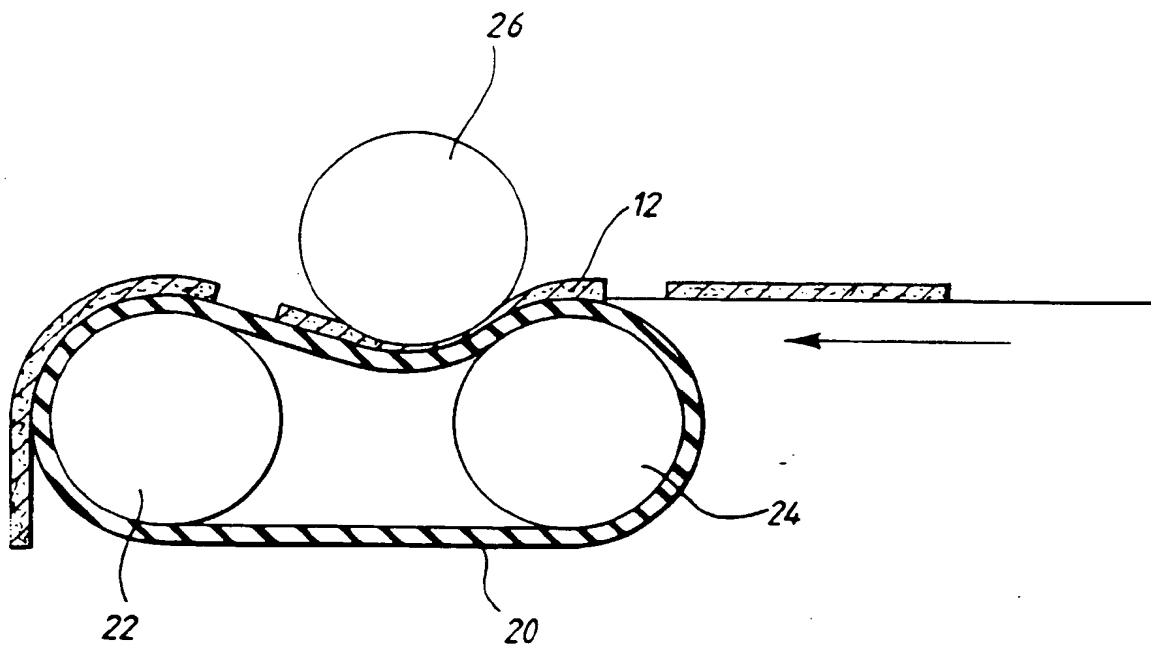
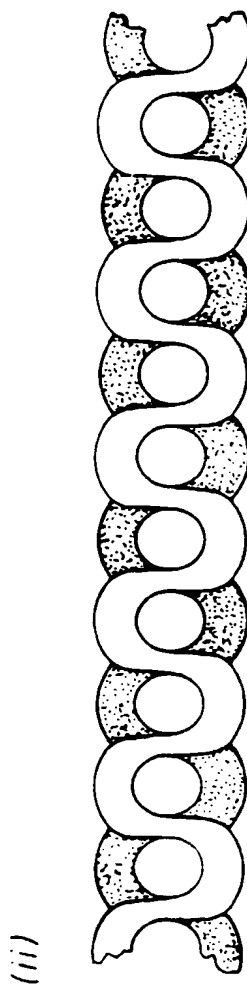
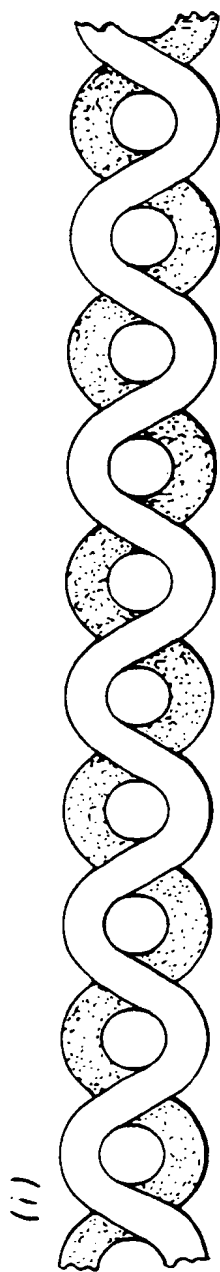


FIG. 2.

FIG. 3.



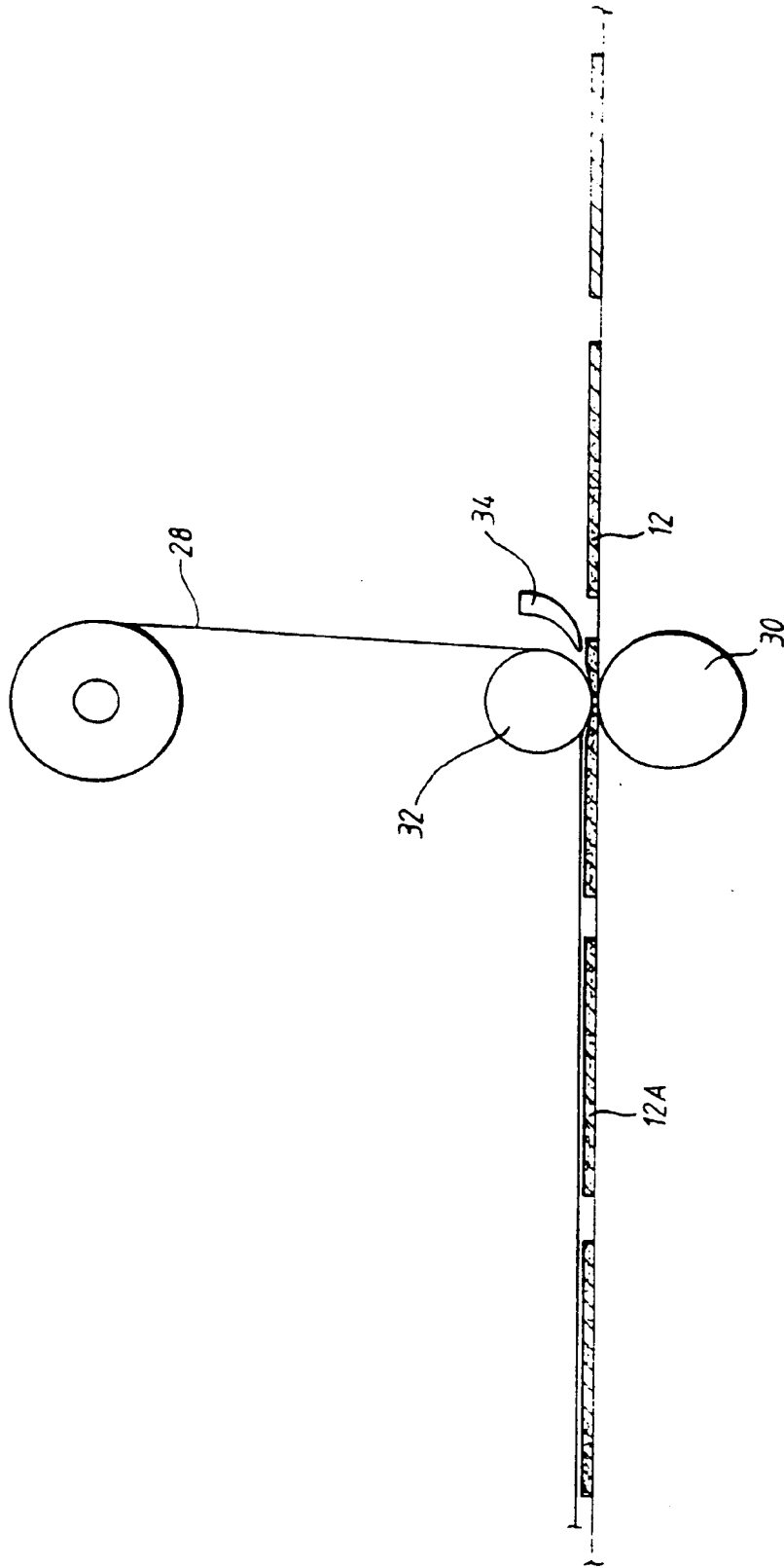


FIG. 4.

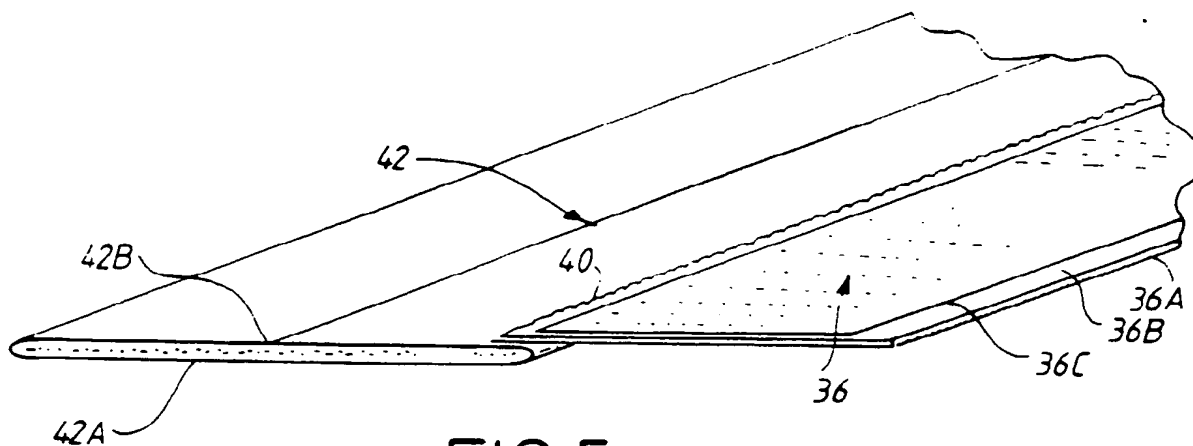


FIG. 5.

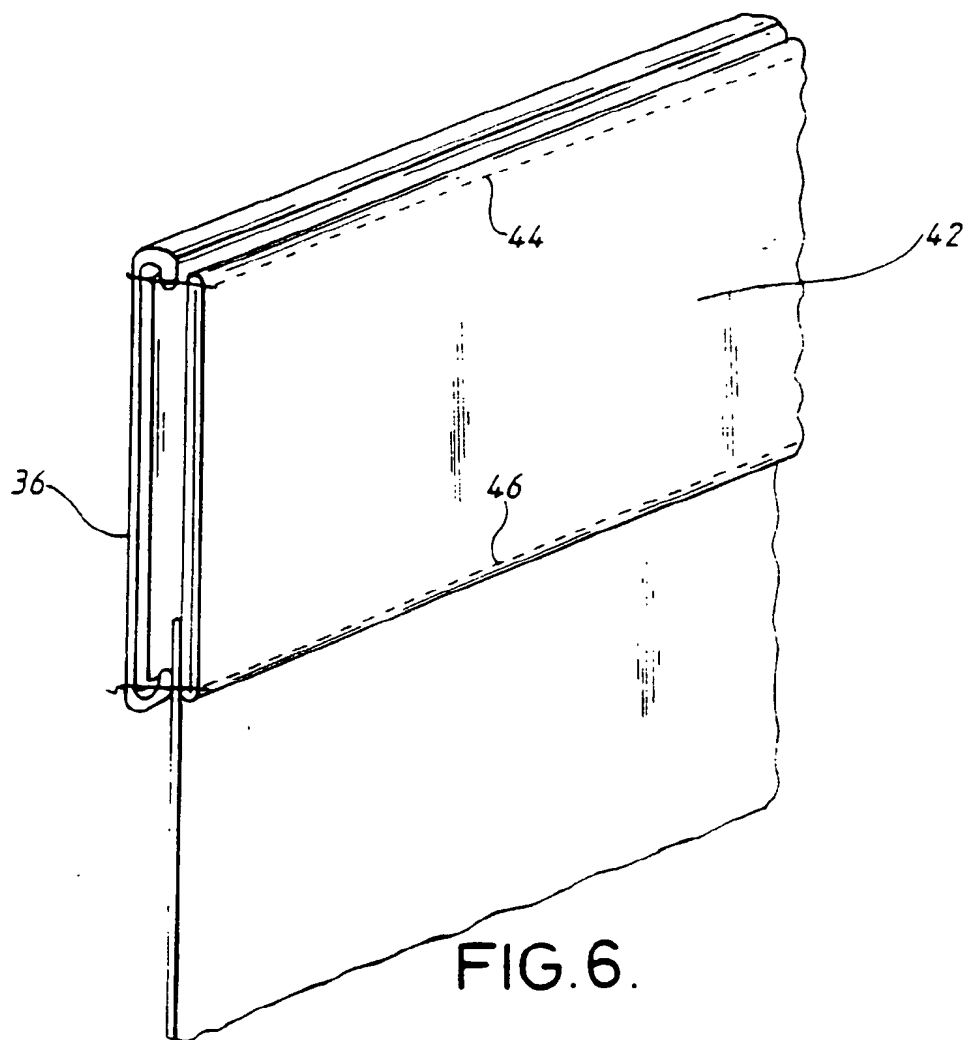


FIG. 6.

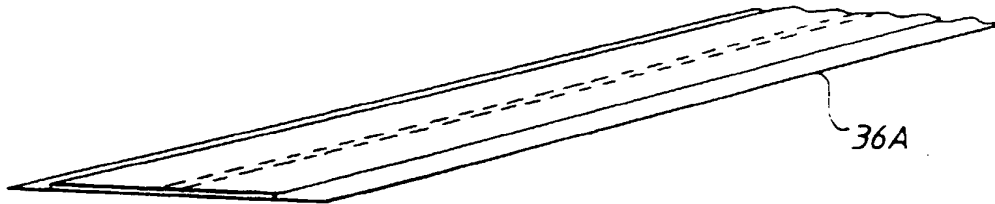


FIG. 7.

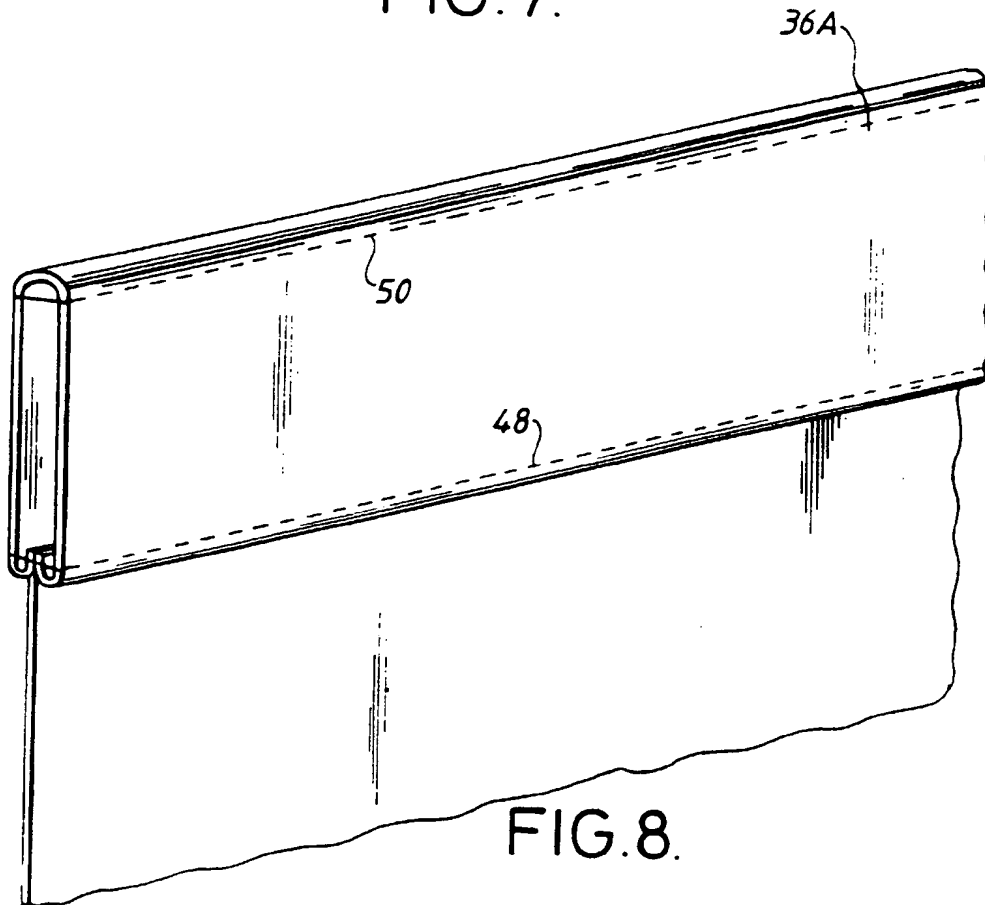


FIG. 8.

FIG. 9.

